REMARKS

Claims 1 and 17-19 presently appear in this case. No claims have been allowed. The official action of April 29, 2008, has now been carefully studied. Reconsideration and allowance are hereby respectfully urged.

Briefly, the present invention relates to antibodies specific for the RAP-2 protein having the sequence of SEQ ID NO:4.

Claims 1 and 17-19 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Yongan thesis in view of Yongan (1998) and Ellis. The examiner takes the position that it would be obvious to make antibodies against FIP-2, a protein taught by the prior art, and that one would have been motivated to do so in order to study the interaction of FIP-2 with the cellular proteins involved in TNF-α-induced apoptosis. The examiner uses the present specification as evidence that there is some degree of overlap in the sequences of RAP-2 and FIP-2 and therefore anti-FIP-2 antibodies recognizing these domains would necessarily be specific for RAP-2. This rejection is respectfully traversed.

Applicant has previously argued that a large percentage of all monoclonal antibodies raised against FIP-2 would not bind to RAP-2 because the areas of overlap are

relatively small. Applicant argued that it would not have been obvious to select those anti-FIP-2 antibodies that also bind to RAP-2 because any such antibodies would have the unexpected property of also binding to RAP-2. In response to these arguments, the examiner stated that the fact that the overlapping regions are small and therefore a large percentage of monoclonal antibodies raised against FIP-2 would not bind to RAP-2 is irrelevant. The examiner states that the instant claims are broadly drawn to any antibody specific for RAP-2 and therefore they encompass antibodies against the overlapping regions and the combined teachings of the references disclose such an antibody and therefore renders the claimed invention *prima facie* obvious.

It is apparent that the examiner has misunderstood applicant's reasoning. The only antibodies that are arguably *prima facie* obvious from a reading of the references cited by the examiner are antibodies against FIP-2 in general. However, the examiner must concede that at least a large percentage of all antibodies raised against FIP-2 would not fall within the scope of present claim 1 as they would not be specific for overlapping regions. Only a specialized subgroup of anti-FIP-2 antibodies would fall with the scope of claim 1. While the examiner states that the combined teachings of the references disclose antibodies

against overlapping regions, this is not the case. The combined teachings arguably make obvious (they do not disclose) antibodies that are generally anti-FIP2. There is nothing in the combined teachings that make obvious those specific antibodies that are directed to "overlapping regions." Those regions which are now known to be overlapping were not known at the time the present invention was made.

The antibodies to "overlapping regions" are a subset of the set of anti-FIP2 antibodies that are allegedly obvious. However, the examiner has not established a case of *prima facie* obviousness why this subset of monoclonal antibodies should be selected from among all of the anti-FIP2 antibodies.

It is well established that a *prima facie* case of obviousness can be rebutted by a showing of unexpected results. See, for example, MPEP 2145. The subset of anti-FIP-2 antibodies that also bind RAP-2 have unexpected properties, by definition. RAP-2 is a novel protein and does not exist in the prior art. The fact that there is any degree of overlap between FIP-2 and RAP-2 was not known to the prior art. It is only disclosed in the present application, which is not prior art. It would not be obvious to screen for those antibodies that bind to both

RAP-2 and FIP-2; there would be no basis for such a screen because RAP-2 does not exist in the prior art and its existence and structural similarity to FIP-2 was not known at the time that the present invention was made.

The examiner states that the fact that a large number of monoclonal antibodies raised against FIP-2 would not bind to RAP-2 is irrelevant. Respectfully, it is extremely relevant. The fact that a subset of "overlapping" antibodies may inherently exist in the full set of anti-FIP-2 antibodies is irrelevant. The present claims are not directed to all antibodies against FIP-2. The present claims only overlap with antibodies against FIP-2 to the extent that those antibodies also bind RAP-2. Why would any specific antibody that may have the properties of binding both, and thus would be covered by the present claim 1, be *prima facie* obvious? The examiner does not explain this point. Selection of the "overlapping" antibodies from among the general class of anti-FIP-2 antibodies is necessary in order to find specific antibodies that may fall within the scope of the present claim. Such selection would not have been *prima facie* obvious.

The bottom line is that, regardless of whether it is *prima facie* obvious to raise antibodies against FIP-2, it would not have been *prima facie* obvious at the time the

present invention was made to select from among all of those anti-FIP-2 antibodies only those that have the additional property of binding to RAP-2. Any antibody that has the property of binding both to RAP-2 and to FIP-2 has properties that would have been totally unexpected by one of ordinary skill in the art at the time the present invention was made, because RAP-2 did not exist at that time. The fact that such an antibody could be used to isolate RAP-2 (although not to the exclusion of FIP-2) is a property of that antibody that would not be possessed by all of those anti-FIP-2 antibodies that are not directed to overlapping regions with RAP-2.

To the extent that the examiner may be arguing that among the antibodies that it would be obvious to make are inherently antibodies that fall within the scope of the present claims, this is not a valid argument with respect to an obviousness rejection (as opposed to an anticipation rejection). As stated in *In re Spormann*, 150 USPQ 449, 452 (CCPA 1966):

> The inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

See also *In re Naylor*, 152 USPQ 106, 108 (CCPA 1966).

For all of these reasons, regardless of whether or not the examiner has established a *prima facie* case for the entire class of anti-FIP-2 antibodies, the examiner has not established a *prima facie* case of obviousness for that subset of all anti-FIP-2 antibodies that happen to also bind to RAP-2. The antibodies within that subset that are the only antibodies covered by the present claims. All of those antibodies have a property that would have been totally unexpected at the time the present invention was made, i.e., the fact that they will not only bind FIP-2, but they will also bind to a previously unknown protein that is now known as RAP-2. For all of these reasons, reconsideration and withdrawal of this rejection are respectfully urged.

It should be noted that applicant is now withdrawing its previous arguments that the claims only encompass antibodies that bind to RAP-2, but do not bind to any other protein.

Claims 20-23 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The examiner states that these claims contain new matter in specifically excluding antibodies recognizing eptiopes found in FIP-2.

Claims 20-23 have now been deleted, thus obviating this rejection.

It is submitted that all of the claims now present in the case clearly define over the references of record and fully comply with 35 U.S.C. 112. Reconsideration and allowance are therefore earnestly solicited.

Respectfully submitted,

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